

### **Abstract**

The present invention is directed to engineered polypeptides having BACE activity. In certain embodiments, the polypeptides also comprise an engineered cleavage site. Also provided are polypeptides comprising a prodomain, an engineered cleavage site, and a protease domain; the polypeptides are properly folded and are cleaved at the engineered cleavage site *in vitro*, producing homogeneous preparations of purified protease having BACE activity.

The invention further pertains to nucleic acids, expression vectors, and host cells comprising the expression vectors for making the engineered polypeptides.